

Use Attainability Analysis

for

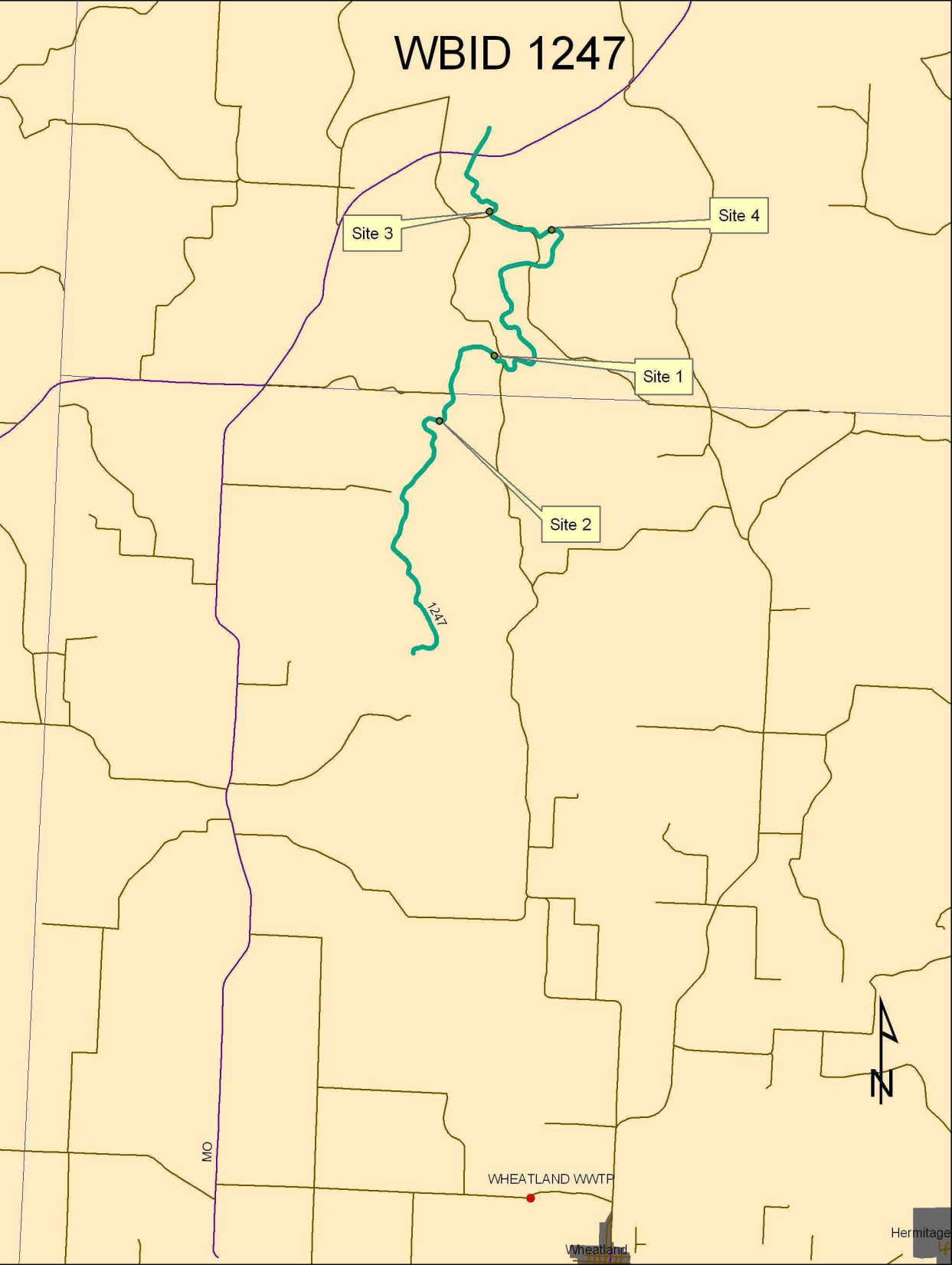
WBID 1247 Little Pomme De Terre

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

Date Received: September 10, 2007

<p align="center">Field Data Sheets for Recreation Use Stream Surveys</p> <p align="center">Data Sheet A - Water Body Identification</p> <p align="center">(For water body being surveyed)</p>							
Water Body Information							
Water Body Name:	Little Pomme de Terre			WBID:	1247		
8 digit HUC code:	10290107			County:	Benton and Hickory		
Upstream Legal Description	T39N	R23W	Sec 26				
Downstream Legal Description	T38N	R23W	Sec 22				
Number of Sites Evaluated	4						
List all site numbers, listed upstream to downstream							
2,	1,	4,	3				
Discharger Facility Information							
Discharger Facility Name(s):	Wheatland WWTP						
Discharger Permit Number(s):	MO0098990						
UAA Surveyor							
Name of Surveyor:	Gilisa Gould			Telephone Number:	913-307-0046		
Organization/Employer:	SES, Inc.						
Position:	Field Team Leader						



Field Data Sheets for Recreational Use Stream Surveys							
Data Sheet B - Site Characterization							
(must be completed for each site)							
WBID	1247						
Site #	1						
Date and Time:	8/21/2007		1:00 PM				
Current Weather Conditions			clear				
Weather Conditions for Past 10 days:			0.3 inches was maximum rainfall				
Drought Conditions? No							
Site Location (e.g. road crossing)			County Road SW 801				
GPS Mark:	45						
Upstream Photo	32		Downstream Photo	31			
Uses Observed (Uses actually observed at time of survey) Circle							
Swimming		Skin Diving		SCUBA diving		Tubing	
Water Skiing		Wind Surfing		Kayaking		Boating	
Wading		Rafting		Hunting		Trapping	
Fishing		<u>None of the Above</u>		Other			
Surrounding Conditions							
City/county parks		Playgrounds		MDC conservation lands		Urban areas	
Campgrounds		Boating accesses		State parks		National Forests	
Nature trails		Stairs/walkway		No trespass sign		Fence	
Steep slopes		<u>None of the Above</u>		Other			
Indications of Human Use							
Roads		Rope swings		Foot paths/prints		Dock/platform	
Livestock Watering		RV/ATV Tracks		Camping Sites		Fire pit/ring	
NPDES Discharge		Fishing Tackle		Other:			

WBID #	1247	Site #	1				
Mark #	45	Dissolved Oxygen (ppm)	7.2				
Upstream Views Physical Dimensions:		Is there any water present at this view?		y			
		If so, is there an obvious current?		n			
Select one of the following channel features:							
	% of Channel Feature						
Riffle	0						
Run	0						
Pool	100						
Downstream View's Physical Dimension		Is there any water present at this view?		n			
		If so, is there an obvious current?					
Substrate:							
41% Cobble		55% Gravel		4% Sand		% Silt	
% Mud/Clay		% Bedrock					
Aquatic Vegetation: (Note amount of vegetation or algal growth at the assessment site)							
<div>15% water lily and coontail.</div>							
Water Characteristics							
Odor	Sewage	Musky	Chemical	<u>None</u>	Other		
Color	Clear	<u>Green</u>	Gray	Milky	<u>Other</u>	<u>Brown</u>	
Bottom Deposit	Sludge	Solids	Fine Sed.	<u>None</u>	Other		
Surface Deposit	Oil	Scum	Foam	<u>None</u>	Other		

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)						
	(Median Depth Shown in Bold)					
Site # 1		Mark # 45		WBID # 1247		
	Depth (m)		Depth (m)		Depth (m)	
Transect 1	0.05	Transect 5	0.10	Transect 9	0.10	
Substrate:	0.30	Substrate:	0.30	Substrate:	0.40	
gravel	0.35	cobbly gravel	0.65	cobbly gravel	0.40	
Water Clarity:	0.35	Water Clarity:	0.75	Water Clarity:	0.40	
some	0.30	some	0.75	some	0.35	
Channel Feature:	0.25	Channel Feature:	0.70	Channel Feature:	0.30	
pool	0.20	pool	0.65	pool	0.20	
Channel Width:	0.15	Channel Width:	0.50	Channel Width:	0.15	
7.00	0.10	10.00	0.40	12.00	0.15	
0.23	0.10	0.58	0.20	0.25	0.15	
Transect 2	0.05	Transect 6	0.10	Transect 10	0.20	
Substrate:	0.15	Substrate:	0.30	Substrate:	0.30	
cobbly gravel	0.35	cobbly gravel	0.60	cobbly gravel	0.30	
Water Clarity:	0.55	Water Clarity:	0.50	Water Clarity:	0.60	
some	0.65	some	0.40	some	0.50	
Channel Feature:	0.65	Channel Feature:	0.35	Channel Feature:	0.35	
pool	0.55	pool	0.35	pool	0.25	
Channel Width:	0.50	Channel Width:	0.25	Channel Width:	0.25	
9.00	0.30	8.00	0.20	10.00	0.20	
0.43	0.15	0.33	0.15	0.28	0.10	
Transect 3	0.20	Transect 7	0.10	Transect 11	0.00	
Substrate:	0.30	Substrate:	0.20	Substrate:	0.10	
gravelly sand	0.50	cobbly gravel	0.40	cobbly gravel	0.10	
Water Clarity:	0.50	Water Clarity:	0.45	Water Clarity:	0.10	
some	0.60	some	0.45	some	0.10	
Channel Feature:	0.75	Channel Feature:	0.45	Channel Feature:	0.05	
pool	0.80	pool	0.25	pool	0.05	
Channel Width:	0.85	Channel Width:	0.30	Channel Width:	0.00	
12.00	0.50	7.00	0.20	4.00	0.00	
0.50	0.30	0.28	0.05	0.05	0.00	
Transect 4	0.25	Transect 8	0.05			
Substrate:	0.30	Substrate:	0.30			
cobbly gravel	0.35	cobbly gravel	0.45		Site Median	Site Maximum
Water Clarity:	0.50	Water Clarity:	0.40		0.30	0.85
some	0.65	some	0.50			
Channel Feature:	0.75	Channel Feature:	0.50			
pool	0.75	pool	0.30			
Channel Width:	0.75	Channel Width:	0.30			
10.00	0.50	8.00	0.20			
0.50	0.25	0.30	0.05			

WBID #	1247	Site #	2			
Mark #	46	Dissolved Oxygen (ppm)	8.7			
Upstream Views Physical Dimensions:		Is there any water present at this view?			y	
		If so, is there an obvious current?			n	
Select one of the following channel features:						
	% of Channel Feature					
Riffle						
Run	91					
Pool	9					
Downstream View's Physical Dimension		Is there any water present at this view?			y	
		If so, is there an obvious current?			n	
Substrate:						
82% Cobble		9% Gravel		% Sand	% Silt	
% Mud/Clay		9% Bedrock				
Aquatic Vegetation: (Note amount of vegetation or algal growth at the assessment site)						
50% small willow and 5% coontail						
Water Characteristics						
Odor		Sewage	Musky	Chemical	<u>None</u>	Other
Color		<u>Clear</u>	<u>Green</u>	Gray	Milky	Other
Bottom Deposit		Sludge	Solids	Fine Sed.	<u>None</u>	Other
Surface Deposit		<u>Oil</u>	Scum	Foam	None	Other

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)						
	(Median Depth Shown in Bold)					
Site # 2		Mark # 46		WBID # 1247		
	Depth (m)		Depth (m)		Depth (m)	
Transect 1	0.05	Transect 5	0.05	Transect 9	0.05	
Substrate:	0.40	Substrate:	0.20	Substrate:	0.20	
cobble	0.45	cobble	0.20	bedrock	0.25	
Water Clarity:	0.50	Water Clarity:	0.20	Water Clarity:	0.25	
clear	0.45	clear	0.30	none	0.25	
Channel Feature:	0.40	Channel Feature:	0.20	Channel Feature:	0.30	
run	0.15	run	0.15	pool	0.30	
Channel Width:	0.15	Channel Width:	0.15	Channel Width:	0.30	
5.00	0.05	6.00	0.05	8.00	0.25	
0.28	0.00	0.18	0.00	0.25	0.25	
Transect 2	0.20	Transect 6	0.00	Transect 10	0.00	
Substrate:	0.25	Substrate:	0.00	Substrate:	0.10	
cobble	0.25	cobble	0.00	cobble/gravel	0.10	
Water Clarity:	0.25	Water Clarity:	0.00	Water Clarity:	0.15	
clear	0.30	clear	0.00	clear	0.20	
Channel Feature:	0.30	Channel Feature:	0.00	Channel Feature:	0.20	
run	0.20	run	0.00	run	0.20	
Channel Width:	0.20	Channel Width:	0.00	Channel Width:	0.20	
5.00	0.00	6.00	0.00	5.00	0.10	
0.23	0.00	0.00	0.00	0.13	0.05	
Transect 3	0.05	Transect 7	0.05	Transect 11	0.00	
Substrate:	0.10	Substrate:	0.25	Substrate:	0.05	
cobble	0.15	cobble	0.25	cobble/gravel	0.05	
Water Clarity:	0.30	Water Clarity:	0.35	Water Clarity:	0.00	
clear	0.35	clear	0.40	clear	0.00	
Channel Feature:	0.35	Channel Feature:	0.35	Channel Feature:	0.00	
run	0.35	run	0.35	run	0.00	
Channel Width:	0.20	Channel Width:	0.35	Channel Width:	0.00	
5.00	0.10	6.00	0.30	5.00	0.00	
0.18	0.05	0.33	0.10	0.00	0.00	
Transect 4	0.05	Transect 8	0.05			
Substrate:	0.10	Substrate:	0.40			
cobble	0.20	cobble	0.30		Site Median	Site Maximum
Water Clarity:	0.20	Water Clarity:	0.40		0.15	0.50
clear	0.15	clear	0.25			
Channel Feature:	0.10	Channel Feature:	0.20			
run	0.00	run	0.20			
Channel Width:	0.05	Channel Width:	0.20			
5.00	0.05	8.00	0.20			
0.10	0.10	0.20	0.10			

Field Data Sheets for Recreational Use Stream Surveys									
Data Sheet B - Site Characterization									
(must be completed for each site)									
WBID	1247								
Site #	3								
Date and Time:	8.21.07			4:00 PM					
Current Weather Conditions	clear								
Weather Conditions for Past 10 days:	0.3 inches was maximum rainfall								
Drought Conditions?	No								
Site Location (e.g. road crossing)	East Branch Road								
GPS Mark:	47								
Upstream Photo	36			Downstream Photo	37				
Uses Observed (Uses actually observed at time of survey) Circle									
Swimming		Skin Diving		SCUBA diving		Tubing			
Water Skiing		Wind Surfing		Kayaking		Boating			
Wading		Rafting		Hunting		Trapping			
Fishing		<u>None of the Above</u>			Other				
Surrounding Conditions									
City/county parks		Playgrounds		MDC conservation lands		Urban areas			
Campgrounds		Boating accesses		State parks		National Forests			
Nature trails		Stairs/walkway		No trespass sign		Fence			
Steep slopes		None of the Above		<u>Other</u>		<u>Farmland and pasture</u>			
Indications of Human Use									
Roads		Rope swings		Foot paths/prints		Dock/platform			
Livestock Watering		RV/ATV Tracks		Camping Sites		Fire pit/ring			
NPDES Discharge		Fishing Tackle		Other:					

WBID #	1247	Site #	3				
Mark #	47	Dissolved Oxygen (ppm)	10.2				
Upstream Views Physical Dimensions:		Is there any water present at this view?		y			
		If so, is there an obvious current?		n			
Select one of the following channel features:							
	% of Channel Feature						
Riffle							
Run	100						
Pool							
Downstream View's Physical Dimension		Is there any water present at this view?		y			
		If so, is there an obvious current?		n			
Substrate:							
% Cobble		50% Gravel		% Sand		50% Silt	
% Mud/Clay		% Bedrock					
Aquatic Vegetation: (Note amount of vegetation or algal growth at the assessment site)							
none							
Water Characteristics							
Odor		Sewage	Musky	Chemical	<u>None</u>	Other	
Color		Clear	Green	Gray	Milky	<u>Other</u>	<u>Brown and cloudy</u>
Bottom Deposit		Sludge	Solids	<u>Fine Sed.</u>	None	Other	
Surface Deposit		Oil	Scum	Foam	<u>None</u>	Other	

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)						
	(Median Depth Shown in Bold)					
Site # 3		Mark # 47		WBID # 1247		
	Depth (m)		Depth (m)		Depth (m)	
Transect 1	0.00	Transect 5	0.10	Transect 9	0.35	
Substrate:	0.20	Substrate:	0.40	Substrate:	0.30	
gravel/silt	0.40	gravel/silt	0.60	gravel/silt	0.50	
Water Clarity:	0.40	Water Clarity:	0.75	Water Clarity:	0.95	
none	1.00	none	0.80	none	1.00	
Channel Feature:	1.00	Channel Feature:	0.75	Channel Feature:	1.00	
run	1.00	run	0.65	run	1.00	
Channel Width:	1.00	Channel Width:	0.60	Channel Width:	1.00	
10.00	1.00	8.00	0.60	7.00	1.00	
1.00	1.00	0.60	0.25	1.00	1.00	
Transect 2	0.10	Transect 6	0.05	Transect 10	0.05	
Substrate:	0.30	Substrate:	0.35	Substrate:	0.30	
gravel/silt	0.45	gravel/silt	0.45	gravel/silt	0.80	
Water Clarity:	0.55	Water Clarity:	0.40	Water Clarity:	1.00	
none	0.90	none	0.25	none	1.00	
Channel Feature:	1.00	Channel Feature:	0.20	Channel Feature:	1.00	
run	1.00	run	0.20	run	1.00	
Channel Width:	1.00	Channel Width:	0.30	Channel Width:	1.00	
8.00	1.00	10.00	0.20	7.00	1.00	
0.95	1.00	0.23	0.10	1.00	1.00	
Transect 3	0.10	Transect 7	0.05	Transect 11	0.05	
Substrate:	0.45	Substrate:	0.10	Substrate:	0.40	
gravel/silt	0.75	gravel/silt	0.20	gravel/silt	0.70	
Water Clarity:	1.00	Water Clarity:	0.10	Water Clarity:	1.00	
none	1.00	none	0.15	none	1.00	
Channel Feature:	1.00	Channel Feature:	0.20	Channel Feature:	1.00	
run	1.00	run	0.25	run	1.00	
Channel Width:	1.00	Channel Width:	0.50	Channel Width:	1.00	
8.00	1.00	10.00	0.40	7.00	1.00	
1.00	1.00	0.20	0.25	1.00	1.00	
Transect 4	0.10	Transect 8	0.05			
Substrate:	0.50	Substrate:	0.20		Site Median	Site Maximum
gravel/silt	0.60	gravel/silt	0.30		0.75	1.00
Water Clarity:	0.80	Water Clarity:	0.35			
none	0.70	none	0.55			
Channel Feature:	1.00	Channel Feature:	0.80			
run	1.00	run	1.00			
Channel Width:	1.00	Channel Width:	1.00			
9.00	1.00	8.00	1.00			
0.90	1.00	0.68	1.00			

Field Data Sheets for Recreational Use Stream Surveys							
Data Sheet B - Site Characterization							
(must be completed for each site)							
WBID	1247						
Site #	4						
Date and Time:	8.21.07		5:00 PM				
Current Weather Conditions	cloudy						
Weather Conditions for Past 10 days:	0.3 inches was maximum rainfall						
Drought Conditions?	No						
Site Location (e.g. road crossing)	upstream of site #3						
GPS Mark:	48						
Upstream Photo	38	Downstream Photo	39				
Uses Observed (Uses actually observed at time of survey) Circle							
Swimming	Skin Diving	SCUBA diving	Tubing				
Water Skiing	Wind Surfing	Kayaking	Boating				
Wading	Rafting	Hunting	Trapping				
Fishing	<u>None of the Above</u>		Other				
Surrounding Conditions							
City/county parks	Playgrounds	MDC conservation lands	Urban areas				
Campgrounds	Boating accesses	State parks	National Forests				
Nature trails	Stairs/walkway	No trespass sign	Fence				
Steep slopes	<u>None of the Above</u>		Other				
Indications of Human Use							
Roads	Rope swings	Foot paths/prints	Dock/platform				
Livestock Watering	RV/ATV Tracks	Camping Sites	Fire pit/ring				
NPDES Discharge	Fishing Tackle	Other:					

WBID #	1247	Site #	4				
Mark #	48	Dissolved Oxygen (ppm)	11				
Upstream Views Physical Dimensions:		Is there any water present at this view?				y	
		If so, is there an obvious current?				n	
Select one of the following channel features:							
	% of Channel Feature						
Riffle	0						
Run	64						
Pool	36						
Downstream View's Physical Dimension		Is there any water present at this view?				y	
		If so, is there an obvious current?				n	
Substrate:							
9% Cobble		91% Gravel		% Sand		% Silt	
% Mud/Clay		% Bedrock					
Aquatic Vegetation: (Note amount of vegetation or algal growth at the assessment site)							
5% trees in stream.							
Water Characteristics							
Odor		Sewage	Musky	Chemical	<u>None</u>	Other	
Color		Clear	<u>Green</u>	Gray	Milky	Other	
Bottom Deposit		Sludge	Solids	<u>Fine Sed.</u>	None	Other	
Surface Deposit		Oil	Scum	Foam	<u>None</u>	Other	

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)						
	(Median Depth Shown in Bold)					
Site # 4		Mark # 48		WBID # 1247		
	Depth (m)		Depth (m)		Depth (m)	
Transect 1	0.50	Transect 5	0.00	Transect 9	0.10	
Substrate:	0.10	Substrate:	0.15	Substrate:	0.30	
gravel	0.15	gravel	0.20	gravel	0.30	
Water Clarity:	0.15	Water Clarity:	0.10	Water Clarity:	0.40	
clear	0.00	clear	0.20	none	0.40	
Channel Feature:	0.00	Channel Feature:	0.25	Channel Feature:	0.40	
pool	0.10	run	0.30	run	0.30	
Channel Width:	0.25	Channel Width:	0.40	Channel Width:	0.35	
13.00	0.30	6.00	0.20	9.00	0.35	
0.15	0.15	0.20	0.05	0.33	0.10	
Transect 2	0.00	Transect 6	0.10	Transect 10	0.20	
Substrate:	0.00	Substrate:	0.20	Substrate:	0.40	
gravel	0.00	cobble/gravel	0.25	gravel	0.35	
Water Clarity:	0.00	Water Clarity:	0.50	Water Clarity:	0.35	
N/A	0.00	none	0.65	none	0.30	
Channel Feature:	0.00	Channel Feature:	0.60	Channel Feature:	0.30	
pool	0.00	run	0.70	run	0.30	
Channel Width:	0.00	Channel Width:	0.50	Channel Width:	0.30	
14.00	0.00	8.00	0.30	17.00	0.25	
0.00	0.00	0.40	0.10	0.30	0.10	
Transect 3	0.10	Transect 7	0.10	Transect 11	0.05	
Substrate:	0.20	Substrate:	0.55	Substrate:	0.15	
gravel	0.00	cobble/gravel	0.65	gravel	0.30	
Water Clarity:	0.00	Water Clarity:	0.75	Water Clarity:	0.40	
clear	0.05	none	0.85	none	0.50	
Channel Feature:	0.25	Channel Feature:	0.65	Channel Feature:	0.55	
pool	0.45	run	0.35	run	0.60	
Channel Width:	0.35	Channel Width:	0.30	Channel Width:	0.55	
21.00	0.10	8.00	0.15	12.00	0.40	
0.10	0.00	0.45	0.10	0.40	0.15	
Transect 4	0.05	Transect 8	0.10			
Substrate:	0.10	Substrate:	0.30		Site Median	Site Maximum
gravel	0.20	gravel	0.20		0.25	0.85
Water Clarity:	0.25	Water Clarity:	0.30			
clear	0.25	none	0.50			
Channel Feature:	0.20	Channel Feature:	0.25			
pool	0.25	run	0.65			
Channel Width:	0.15	Channel Width:	0.45			
3.00	0.50	10.00	0.30			
0.20	0.05	0.30	0.15			

WBID# 1247



Site# 1 Photo ID# 32, Upstream



Site# 1 Photo ID# 31, Downstream



Site# 2 Photo ID# 33, Upstream



Site# 2 Photo ID# 34, Downstream

WBID# 1247



Site# 2 Photo ID# 35, Livestock watering



Site# 3 Photo ID# 36, Upstream



Site# 3 Photo ID# 37, Downstream



Site# 4 Photo ID# 38, Upstream

WBID# 1247



Site# 4 Photo ID# 39, Downstream